TECHNICAL SPECIFICATIONS

WASHINGTON STATE FERRIES

M.V. KITSAP DRYDOCKING

CONTRACT NO. 00-7043

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TECHNICAL SPECIFICATIONS

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to accomplish each and every Bid Item unless otherwise specified.

The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle Cost modeling. Bidders should ignore such bracketed sub-titles.

1. DRYDOCK VESSEL

{ MAINTENANCE }

M.V. KITSAP Vessel Particulars:

Length: 328'-0", Beam: 78'-8", Draft: 16'-6", Gross Tons: 2,475

A. Drydock Vessel within 5 days of Vessel arrival for cleaning, painting, inspections, and the work specified herein.

B. Block spacing shall be at twelve foot (12') centers. Within twenty-four (24) hours of Docking, provide three (3) copies of the block position drawing to the WSF Inspector indicating the block positions used.

C. Vessel shall be blocked to expose the block positions used at the previous docking. "BLOCK POSITION FORM" showing previous docking position, is provided for reference.

2. TEMPORARY SERVICE

{ MAINTENANCE }

A. Install one (1) telephone on board in a location designated by the Vessel Staff Chief Engineer. The telephone is to have one (1) outside line with toll-free access to Seattle and vicinity and, if different, one (1) line for local numbers. The telephone shall have touchtone service if available from the Contractor's telephone system.

B. Provide and maintain electricity, water, safe lighted gangway and trash removal services while Vessel is in the Contractor's facility.

C. Provide safety and security for the entire Vessel throughout this contract period until such time as the WSF Representative has accepted re-delivery of the Vessel. Every reasonable precaution shall be taken to protect the Vessel from the hazards of fire, flooding, pilferage, malicious damage, and other events including cataclysmic phenomena of nature.

D. Provide and maintain comprehensive and effective fire prevention and fire detection, and fire fighting programs and systems sufficient to ensure the safety and integrity of the Vessel. Provide personnel trained in shipboard fire fighting techniques and also trained to cooperate with and assist local fire fighting organizations. Provide sufficient shore fire lines to ensure an adequate supply of fire fighting water, at sufficient pressure, and maintain an adequate number of tested fire-hoses aboard the Vessel to effectively fight fires at any location in the Vessel.

E. Provide and maintain portable fire extinguishers in sufficient quantity, and of the appropriate type, to combat local fires of any class. Provide sufficient fire watches, including roving watches as may be required, to ensure that fires that may be inadvertently started by welding sparks or heat, electrical malfunction, or spontaneous combustion are detected, reported and promptly extinguished.

3. SEA VALVE INSPECTION

{ MAINTENANCE }

A. Remove, open, clean and inspect all valves listed below in this Item for mechanical operation, condition of valve, condition of the valve seats and seals. Install Contractor furnished new seat and seal kits for all butterfly valves, using the NORRIS M 200 A7 repair kits. All two inch (2”) and below valves shall be replaced with in kind Contractor furnished new USCG approved sea valves. Sea valves that are replaced shall remain Vessel’s property.

B. Open the below listed sea valves, clean and inspect as required for inspection on M.V. Kitsap.

SEA VALVE LIST				
LOCATION	**SERVICE**	**TYPE**	**SIZE**	**Quantity**
Engine Room 1	Main Sea Suction	NORRIS Butterfly	8"	
Engine Room 2	Main Sea Suction	NORRIS Butterfly	8"	
Engine Room 1	Fire Pump Recirculating	gate	2"	
Engine Room 2	Fire Pump Recirculating	gate	2"	
Engine Room 2	Sanitary supply water	gate	2"	
Engine Room 1	Sea chest vent	gate	2"	
Engine Room 2	Sea chest vent	gate	2"	
Engine Room 1	Sea chest blow down	gate	1"	
Engine Room 2	Sea chest blow down	gate	1"	
Engine Room 1	SSDG Suction	gate	2”	
Engine Room 2	SSDG Suction	gate	2”	

C. Sea valves shall be inspected by the WSF and USCG Inspectors for the following:

1. General material condition.
2. Valve disk to valve seat contact.
3. Proper mechanical operation.

D. Furnish and renew all o-rings and gasket components in NORRIS butterfly valves and all connections to piping.

E. Upon completion of valve overhaul, and prior to installation, hydrostatically test all overhauled and new valves to the satisfaction of the WSF and USCG Inspectors, and the Vessel Staff Chief Engineer.

F. Remove sea growth and/or rust build-up in associated connecting piping between sea chest, sea valves and strainer boxes. Sea chest, strainer box and piping shall be inspected for cleanliness by the WSF Inspector and Vessel’s Staff Chief Engineer prior to closing up.

4. ZINC RENEWAL
{ MAINTENANCE }

A. Renew bolt-on zincs at the following locations:

1. Port and Starboard sea chest, four (4) zinc anodes each (total of eight (8) zincs 6” by 12”).

2. Under both rope guards install four (4) zinc anodes two (2) 6” by 12” zinc anodes cut in half per end).

3. Adjacent to each keel cooler at six (6) locations, six (6) zinc anodes each (total of thirty-six (36) 25 lb zincs).

4. Hub zincs, one (1) each End (total of two (2)).

5. RUDDER INSPECTION, NO. 1 AND NO. 2 ENDS
{MAINTENANCE}

A. Drain and pressure-test rudders for leaks in the presence of the WSF and USCG Inspectors and the Vessel Staff Chief Engineer. Test pressure shall be 42" of water with Manometer, or 1.5 PSI on acceptable calibrated pressure gage that has 1.5 PSI at mid scale range. Accepted test is no leaks for one (1) hour. Provide three (3) copies of the test results to the WSF Inspector.

B. Take and record clearances of rudder pintle and rudderstock bearings on No. 1 and No. 2 End rudders. Submit three (3) copies of a written report of findings to the WSF Inspector within 48 hours of drydocking. Cycle each rudder from hard over to hard over in the presence of the WSF Inspector recording the time and total travel.

6. PROPELLER INSPECTION, NO. 1 AND NO. 2 ENDS
{ MAINTENANCE }

A. Erect and remove staging in areas around No. 1 and No. 2 End Propeller blades to accomplish all affiliated work and inspection required.

B. Polish the No. 1 and No. 2 End Propellers by power disk sanding, using 80 grit or finer abrasive. Thoroughly clean propeller blades for nondestructive testing.

C. Inspect No. 1 and No. 2 propellers for damage and proper blade track. Conduct a Nondestructive test using a qualified NDT Inspector, for surface cracks on the blades in the presence of the WSF and USCG Inspector, and the Vessel Staff Chief Engineer. Submit three (3) copies of a written report of findings to the WSF Inspector within twenty-four (24) hours of test completion.

7. CONTROLLABLE PITCH PROPELLER HUB INSPECTION, NO. 1 AND NO. 2 ENDS

A. Remove the No. 1 and No. 2 rudder blades to the drydock floor.

B. Measure and record the measurements of all rudder bearings including lower and upper rudder stock bearings, pintle pin bushings, pintle pin bearing, and carrier bearing. Visually inspect all bearing surfaces for condition. Ensure proper location and operation of grease passages to the carrier bearing and upper rudder bearing. Provide a written report on all conditions to the WSF Inspector.

C. Have the Vessel's crew pitch the propellers to the full ahead position. Drain and dispose of the oil from the propeller stern tube bearings. Drain and dispose of the oil from the propeller shaft by removing plugs from the hubs. All oils shall be deposed of in accordance with all applicable local, State and Federal rules, laws, and regulations.

D. Remove the rope guards. Remove the clamp ring from the inboard seal liners. Provide rigging support for the inboard end of the tail shaft. Set up to capture any oil present in the coupling prior to splitting the coupling.

E. Disconnect the SKF tail shaft coupling, and drift the coupling out enough to allow the oil tubes to be uncoupled. Disconnect the tail shaft portion of the oil tubes from the intermediate section. Disassemble the O.D. Box portion of the oil tubes enough to allow all of the oil tubes to be withdrawn, if necessary.

NOTE:

The Contractor is reminded of the shaft grounding assembly in the No. 1 and No. 2 End Tank Rooms which will require lifting of the grounding brushes prior to any drifting of the stern shaft assembly. Any damage caused by failure to raise the brushes and protect the assembly shall be repaired at the contractor's expense.

F. Remove all propeller blades from the hubs. Remove the end plate from the hubs, and disconnect the oil tubes from the propeller control rods. Push the seal liners and bolt covers forward, and remove the hub mounting bolts. Remove the propeller hubs from the tail shaft using the WSF furnished lifting fixture. Protect the propeller hubs from contamination.

G. Perform a magnetic particle inspection of the tail shafts in way of the hub mounting flange, holes and radius. Submit three (3) copies of a written report of the findings to the WSF Inspector.

H. Remove the tail shaft from the Vessel.

I. Open and clean system sump, piping and hoses to the satisfaction of the WSF Inspector and Vessel Staff Chief Engineer.

J. Remove the hubs from the Vessel to clean facility. Provide the services of a Rolls-Royce Marine representative to perform the inspections outlined in the Issaquah Class Propeller Hub Service Manual for every 2nd and 5th years.

K. Reinstall the shafts when all work on the stern frame is complete. Install the new WSF-furnished propeller shaft seals

L. Re-mount the propeller blades with new blade seals. The Contractor shall provide all new blade bolts, hub bolts, washers, gaskets, blade seals, o-rings, retainers and consumables for those disturbed during removal.

M. Upon completion of assembly of the Controllable Pitch Propeller System, and in the presence of the Vessel Staff Chief Engineer, and WSF and USCG Inspectors, verify the "A" dimension with the blades pitched to "Blade Tram" marks to ensure that each system is pitching properly.

N. At the start and completion of the CPP work, the contractor shall provide the pumping and cleaning of all bilge in areas affected by the Work.

O. Load WSF furnished oil on board. Refill the shaft and propeller system with the WSF furnished oil.

P. Re-install the rope guards.

Q. Reinstall rudders. Test for proper operation in the presence of the WSF Inspector.

8. WAUKESHA INNER AND OUTER SEAL REPLACEMENT, NO. 1 AND NO. 2 ENDS

{ MAINTENANCE }

A. Remove the existing outer and inner Waukesha Seals and Liners. Replace with new WSF supplied outer Eagle Seals and Liners. Provide the services of an authorized Eagle Seal service Representative during the installation of the new Seals and Liners. The Eagle Seal Representative is, Sound Propeller 1608 Fairview Ave. E., Seattle, WA. 98102, Phone No. (206)-325-5722.

B. Drain all oil from the outer Waukesha oil seal system, including the stern tube cavity. Dispose of oil (approximately 350 gallons, each end). Clean the head tank and the bilge sump tank. Flush the piping from the head tank to the bilge sump tank by using ten (10) gallons of clean system oil poured down the piping from the head tank to the bilge sump tank. Clean flushing oil from the bilge sump tank. Close up the head tank and sump tank with new Contractor furnished fasteners and gaskets.

C. Take Eagle Seal bearing wear down readings after installing seals, in the presence of the WSF Inspector and the Vessel Staff Chief Engineer. Submit three (3) copies of the written reports of the readings to the WSF Inspector. Upon completion of taking wear down readings, lock wire the liner and housing fasteners. Fill the outer seal with Hyperlube or STP.

D. Prior to installing the rope guards remove the existing zincs and replace them with new. Take run out readings on the face of the propeller and the counter bore for the seal. Dial in the outboard liner after propeller installation, run out not to exceed .005". Reading to be witnessed by the WSF Inspector and the Vessel Staff Chief Engineer. Submit three (3) copies of a written report of the readings to the WSF Inspector.

E. Using a feeler gauge take stern tube bearing clearances. Exercise care with the feeler gauge so as not to break off leaves in the bearing. Submit three (3) copies of a written report of the readings to the WSF Inspector.

F. Fill the stern tube system with WSF furnished oil.

G. Transport the removed outer Waukesha Seals and Liners to the WSF Warehouse at 6th Ave. South, Seattle, WA. Inform the WSF Inspector twenty-four (24) hours prior to transporting. Provide the WSF Inspector with three (3) copies of the inventory list of transported equipment

9. STERN FRAME REPAIRS, NO. 1 AND NO. 2 ENDS

{ MAINTENANCE }

A. Blank off each stern tube openings on the No. 1 and 2 ends.

B. Weld build up eroded surfaces designated by the WSF Inspector using an ABS approved welding procedure. Submit a copy of the procedure to the WSF Inspector. For bidding assume 300 linear feet of each stern frame will require welding. This Item will be adjusted upwards or downwards to account for actual square footage authorized by the WSF Inspector.

C. Machine stern tube faces true upon completion of weld buildup to accept the WSF provided Eagle Seals. Chase all threads.

D. Preservation is to be accomplished in accordance with the hull painting Items.

PAINTING OF VESSEL AND HULL PRESERVATION

Special Note

ATTACHMENT NO. 1

Area Preparation, Surface Preparation, Grit Blasting, Paint Coatings, and Inspection for Vessel's hull, curtain plates, casing and super structure shall be in accordance with Washington State Ferries Marine Coating Specification 01/03 unless otherwise specified in the following Specifications.

10. FRESH WATER WASH OF VESSEL HULL

{ MAINTENANCE }

A. Within twenty-four (24) hours of drydocking Vessel, perform a Low-Pressure Water Cleaning (LP WC) at 3,000-3,500 PSI. in accordance with SSPC-SP 12/NACE 5. The wand shall be held no more than twelve inches (12") from the surface being washed. The entire Hull from the top of the Guard to the Keel, including, flat keel, all horizontal and vertical surfaces of the guard, rudders, sea chests, sea chest strainers, propellers shall be washed. The wash shall leave no visible growth or residue after the hull dries from washing.

B. Sea chest strainer plates shall be removed for cleaning, preparation and painting and reinstalled upon completion of all related work and inspection.

11. PREPARATION OF VESSEL HULL FOR GRIT BLASTING

{ PRESERVATION }

NOTE:

Care shall be taken to avoid damage to the CAPAC anodes and reference cells. The anodes are located at Frame 54 Port and Starboard, both ends, approximately nine feet (9') above the keel. The reference cell is located on the starboard side toward the No. 1 End.

A. Provide covering and protection on propellers, propeller bearings, exposed shafting, CAPAC anodes and reference cells, all through-hull penetrations and entrance ways to protect and prevent grit blast material from causing damage or entering the Vessel. Blank the main sea chest openings from inside while the valves are removed for maintenance, so the valve mounting flange may be painted on the inside.

B. Prior to Blasting and upon removal of protective items an inspection will be required by the Contractor, WSF Inspector and Vessel Staff Chief Engineer.

12. GRIT BLAST HULL

{ PRESERVATION }

NOTE:

For bidding purposes, assume that **3,000 Square Feet** of hull above the water line and the entire hull below the waterline will require grit blasting to SSPC-SP 6, Commercial Blast Cleaning. Upon completion of hull grit blasting, the Contract will be adjusted upward or downward to account for the actual scope of grit blasting authorized by the WSF Inspector.

NOTE:

The Contractor shall have the option to grit blast to an SSPC-SP6, Commercial Blast Cleaning or Hydroblast to Hydroblast Standard, HB 2½ L, Light Flash Rusting.

A. Prepare areas of abrasion and corrosion on the hull from the from the top flat surface of the rub rail down to the waterline and the entire under water body, including flat keel, sea chest, strainer plates and rudders, to an SSPC-SP6, Commercial Blast Cleaning or an Hydroblasting standard HB 2 1/2, L Light Flash Rusting.

13. ANODE AREA CAPASTIC REPLACEMENT

{ PRESERVATION }

A. Renew all the capastic around the CAPAC anodes using 'Capastic' epoxy troweling compound made by ELECTROCATALYTIC, INC.

B. The shield area shall be blasted to an SSPC-SP-10, Near White Blast. The capastic shall be applied to a minimum thickness of 1/8 inch in the area of the shield out from the faired area around the anode. The capastic shall be troweled so as to achieve an overall smooth surface.

C. Build up a minimum of 22 mils DFT of epoxy Anti-Corrosion coating over the capastic areas and the secondary dielectric shield areas.

14. PAINTING OF VESSEL HULL, ANTI-CORROSION COATING

{ PRESERVATION }

NOTE:

For bidding purposes, assume that **3,000 Square Feet** of the hull above the waterline and the entire hull below the waterline will require the ANTI-CORROSIVE COATINGS. The Contract will be adjusted upward or downward, using the square footage determined in Grit Blasting Hull Item.

A. Apply one (1) coat of INTERNATIONAL Intertuf 262 epoxy, Red, to a minimum of 5 mils (DFT) to surface areas prepared in Grit Blasting Hull Item.

B. Apply one (1) coat of INTERNATIONAL Intertuf 262 epoxy, Gray, to a minimum of 5 mils (DFT) of contrasting color to all surfaces painted in paragraph "A" of this Work Item.

C. Apply one (1) additional coat of INTERNATIONAL Intertuf 262 epoxy, Red, to a minimum of 5 mils (DFT) to surface areas under the new keel coolers.

15. PAINTING OF VESSEL HULL, BELOW WATERLINE ANTI-FOULING

{ PRESERVATION }

A. Apply one (1) coat of INTERNATIONAL INTERSPEED ANTIFOULING, BRA Series, Red, to a minimum of 5 mils (DFT) to the entire underwater body.

B. Apply one (1) coat of INTERNATIONAL INTERSPEED ANTIFOULING, BRA Series, Black, to a minimum of 5 mils (DFT) to all surfaces painted in paragraph A.

16. DRAFT MARKS

{ PRESERVATION }

A. Repaint all draft marks and underwater hull markings, using INTERNATIONAL Interlux Y5584, Shark White.

17. PAINTING OF VESSEL HULL, ABOVE THE WATERLINE

{ PRESERVATION }

NOTE:

For purpose of bidding assume that **3,000 Square Feet** of hull above the waterline will require painting. The contract will be adjusted upward or downward using the square footage determined in Grit Blasting Hull Item.

A. Apply one (1) coat of INTERNATIONAL, Intercare 755, WSF Green, at a minimum of 2 mils (DFT) to all surfaces prepared above waterline in Grit Blast Hull Item.

B. Apply one (1) coat of INTERNATIONAL Intercare Black, at a minimum of 2 mils (DFT) to the entire vertical and horizontal surfaces of the guard.

18. NONSKID NAVIGATION DECK
{PRESERVATION}

A. Obtain the services of the Sherwin-Williams Representative, Mr. Ray Meador, 206-391-1293 to oversee the application of the non-skid.

B. Prepare entire navigation bridge deck to an SSPC-SP6, Commercial Blast Cleaning with a track blaster. Remove all traces of blast beads from all areas of the Vessel. Areas that are inaccessible to a track blaster shall be prepared to SSPC-SP11, Power Tool Cleaning to Bare Metal including the water way bar at the deck edge.

C. Apply one anticorrosive coat, Sherwin-Williams Corothane 1 Galva-Pac Zinc, gray, to obtain 3 to 4 mils (DFT) to all surfaces prepared under above. Apply one primer coat, American Safety MS 7CZLT, gray, to obtain 4 to 5 mils (DFT) to all surfaces prepared under above. Provide a six inch (6") margin in way of the water way bar and around all deck structures. Apply one (1) coat of Haze Gray to this combing area. Apply one (1) NON-SKID coat, American Safety AS-250, Haze Gray, to all other surfaces prepared under above paragraph.

19. CAR DECK PAINTING, PREPARATION AND SPOT COAT
{PRESERVATION}

NOTE:

The Contractor is advised to exercise care and caution to assure that all insulation, light fixtures, speakers, cabling, alarms and appurtenances are protected and not damaged during the course of this work.

A. Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation Definitions) in SSPC-SP 12/NACE 5 Publication, to the outboard car lanes and center tunnel bulkheads and overhead and curtain plates. The wand shall be held no more that twelve inches (12") from surface being washed. Do not use International GMA or equal when washing.

B. Perform an inspection of the entire fresh water washed areas to the satisfaction of the WSF Inspector prior to proceeding with any preparation for painting, or painting.

C. Prepare inside bulkhead of the curtain plate from the curbing to the overhead and the overhead to 8 feet inboard on the overhead on the upper and lower car decks of areas of abrasion and corrosion. For bidding purposes assume 8,000 square feet will require preparation to a Hydroblasting standard HB 2½, L Light Flash Rusting or grit blast to an SSPC-SP6, Commercial Blast Cleaning. Areas that cannot be blasted shall be prepared to a SSPC-SP11, Power Tool Cleaning to Bare Metal. Include the top side of the stiffener above the window cutout and curbing. Remove the MES containers prior to beginning hydroblasting. Unfasten SP phone boxes, switches and other items to prep areas behind them. Remove the screens under the boat stations and prep window openings. Sweep the screens prior to painting and reinstallation. All ratholes and sharp edges of all angles and cutouts shall be mechanically ground to remove any sharp edges. The zone includes fueling and tank vent stations.

D. Prepare a total of 200 linear feet of curbing fifty feet (50') each side and each end) and the entire outboard curbing on the upper car decks (Port and starboard) of areas of abrasion and corrosion to a Hydroblasting standard HB 2½, L Light Flash Rusting or grit blast to an SSPC-SP6, Commercial Blast Cleaning. Areas that cannot be blasted shall be prepared to a SSPC-SP11, Power Tool Cleaning to Bare Metal. Include the top side of the stiffener above the window cutout and curbing.

E. Apply up to 400 linear feet of Sinkaflex 1-A caulking. Caulking shall be applied to skip welded stiffner seams on the curtain plate and overhead of the vehicle lanes.

F. Apply one (1) coat, applied to a minimum of 3 mils (DFT) of INTERNATIONAL Intertuf 262 series epoxy, Red; one (1) coat applied to a minimum of 3 mils (DFT) of INTERNATIONAL Intertuf 262 series epoxy of a contrasting color to the areas prepared in paragraph C and D of this Item. Apply International Intercare 755 to a minimum of 2 mils DFT to match existing color to the entire areas of the inside bulkhead of the curtain plate from the curbing to six (6) feet inboard on the overhead on the upper and lower car decks and the curbing area prepared in paragraph D.

20. TOPSIDE PAINT, GREEN COAT
{MAINTENANCE}

A. Low pressure wash the areas outboard the curtain plate, wheelhouse tops, and lower portions of both stacks that are painted green. These areas include the outboard of curtain plates, pilothouse tops, and lower portion of both stacks. Low pressure water cleaning shall be accomplished with water pressure of 3,000 to 3,500 psi in accordance with SSPC-SP 12/NACE 5. The wand shall be held no more than twelve inches (12") from the surface being washed.

B. Apply International 950 GMA571 to green painted area pressure washed by PARA A above. Rinse in accordance with manufacturer's instructions. Dispose of all rinse water and other residues in accordance with appropriate environmental regulations. Pay particular attention to proper rinsing to prevent streaking or dulling of existing white paint that is not to be repainted.

C. Prepare areas of bare steel existing or exposed by paragraph A of this Item to SSPC-SP3 Power Tool Cleaning. For bidding purposes, assume 400 square feet will require power tool cleaning. The Contract will be adjusted upwards or downwards to account for the actual square footage authorized by the WSF Inspector.

D. Apply one (1) coat, applied to a minimum of 5 mils (DFT) of INTERNATIONAL Intertuf 262 series epoxy, Red; one (1) coat applied to a minimum of 5 mils (DFT) of INTERNATIONAL Intertuf 262 series epoxy of a contrasting color to the areas prepared in paragraph C of this Item. Apply International Intercare 755 to a minimum of 2 mils DFT to match existing color to the entire area itemized in paragraph A. of this Item.

21. SUPERSTRUCTURE PREPARATION AND PAINTING {MAINTENANCE}

NOTE:

For bidding purposes, assume that **2000 Square Feet** will require preparation. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

A. Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation Definitions) in SSPC-SP 12/NACE 5 Publication, in Zones 5. The wand shall be held no more that twelve (12) inches from surface being washed. Do not use Ameron, Prep 88 or International GMA or equal when washing.

B. Prepare areas of abrasion and corrosion on the No.1 and No 2 Pilothouses and stacks. For bidding purposes assume 2,000 square feet will require preparation.

NOTE:

The Contractor shall have the option to grit blast to an SSPC-SP6, Commercial Blast Cleaning or Hydroblast to Hydroblast Standard, HB 2½ L, Light Flash Rusting.

C. Appy one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT) at prepared surfaces. Appy a second coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT) at prepared surfaces of a contrasting color.

D. Apply a topcoat of INTERNATIONAL Intercare at a minimum of 2 mils (DFT) of proper color to the prepared areas. Apply a coat of INTERNATIONAL Intercare at a minimum of 2 mils (DFT) of Black to the stripes on the stacks.

22. WALKOFF MAT INSTALLATION

{MAINTENANCE}

A Install a 6' by 8' walkoff mat at each exit door from the main cabin to the pickleforks, four (4) total. Mats shall be Bonar Floors Inc, Coral Duo-Graphite 9110.

B. Remove existing tile and underlayment. Prepare disturbed areas in way of the mat installation to an SSPC-SP 3, power tool cleaning

C. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT).

D. Install underlayment and structural fire protection so that the walkoff mat to be flush with the floor tiles. Coat the underlayment with an epoxy sealer prior to installing the walkoff mats. Coral Duo shall be laid with the ribs running at right angles to the walking direction.

E. Install a stainless steel transition strip with removable flat top and countersunk fastners over the transition between deck tile and mat.

23. RENEW SOLARIUM PANELS

{ PRESERVATION }

A. Remove all the solarium overhead panels and gaskets located on No. 1 and No. 2 Ends Passenger cabin.

B. Prepare the interior and exterior surfaces of both No. 1 and No. 2 End solarium structures to a SSPC-SP3, Power Tool Cleaning.

C. Inspect all steel structure and submit a report of steel replacement. For bidding plan on 20 square feet of steel renewal around the solarium panels will require replacement.

D. Furnish labor, material and equipment to apply two (2) coats of International Intertuf 262, to all prepared surfaces using hand striping method, to all panel edges, both side and overhead in way of gasket material, to obtain a minimum of 6 mils each coat.

E. Furnish and apply one (1) coat of International Intercare 755 blue white to obtain a minimum of 2 mils (DFT) to all prepared surfaces.

F. Furnish new overhead acrylic panels, gaskets and caulking. New panels shall be templated from the existing openings and allow for thermal expansion and contraction as recommended by the Manufacturer.

G. The new overhead panels shall be constructed of Lucite acrylic, color gray, or equal. Caulk all gaskets with A.C. Products Flexible Sealant, black.

H. Hose test each overhead panel to the satisfaction of the WSF Inspector. No leaks allowed.

24. CHARGE AIR COOLING SYSTEM MODIFICATIONS

{ PRESERVATION }

A. Install keel coolers for the existing ships service generators as shown on WSF Dwg. No. 8300-650-001-01 Issaquah Class Ship Service Generator Keel Cooler Modifications, WSF Dwg. No. 8303-650-074-01, MV Kitsap, SSDG Cooling Piping Modifications, WSF Dwg. No. 8303-585-091-03, MV Kitsap, Charge Air Cooling Pumps Wiring Diagram and WSF Dwg. No. 8303-585-091-13, MV Kitsap, Charge Air Cooling Pumps Wiring Diagram Ripout, and 8303X-585-089-02, MV Kitsap, Ship Service Switchboard Arrangement and Modifications.

B. Install new keel coolers and angle coolers as shown on WSF Dwg. No. 8300-650-001-01. Adjacent to each new keel cooler at four (4) locations, add six (6) zinc anodes each (total of twenty-four (24) 25 lb zincs).

C. Install new piping for the generator cooling systems as shown on WSF Dwg. No. 8303-650-074-01. Install ¾" pipe nipples and caps on the new and existing SSDG cooling lines prior to the lines penetrating the hull. Location to be determined by the Vessel Staff Chief Engineer.

D. Remove the salt water piping, duplex strainer, valves, plate heat exchanger, salt water pump and overboard for the ship service generators as shown on WSF Dwg. No. 8303-650-074-01. Insert the hull in way of the overboards. Insert shall be a minimum of twelve (12) inch diameter. Blank the suction valves on the seachest openings at the flange. Fabricate new deck plate gratings in way of the removed the pumps, strainers and heat exchangers to match the surrounding grating height.

E. Wiring shall be modified in accordance with WSF Dwg. No. 8303-585-091-03, WSF Dwg. No. 8303X-585-089-02 and WSF Dwg. No. 8303-585-091-13. Holes in switchboard face shall be plugged.

F. Conduct a hydrostatic test of the new system to 150% of the system operating pressure in the presence of the WSF Inspector and the Vessel Staff Chief Engineer. Note the new cooler shall only be tested to the manufacturers recommended test pressure.

G. Conduct a dye penetrant test of the new hull inserts in the presence of the Coast Guard and WSF Inspectors.

H. All new and disturbed piping and steel shall be painted to match surrounding area.

I. Upon completion of the installation conduct an operational test of the new system installation. The Vessel's crew will operate the generator.

J. Prepare new and disturbed areas in way this work to an SSPC-SP 3, power tool cleaning.

K. Apply one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT) at prepared surfaces.

L. Apply a topcoat of INTERNATIONAL Intercare at a minimum of 2 mils (DFT) of proper color.

M. Exterior hull areas shall be painted in conjunction with hull painting Items.

25. ENGINE ROOM ACOUSTIC ENCLOSURE

{ VESSEL PROJECT }

A. Fabricate and install a sound-proofed enclosure for the crew to access the engineer's day room from the engine room as shown on WSF Dwg. No. 8303-583-007-01, MV Kitsap, Acoustic Enclosure Engineer Day Room / ER No. 1 Arrangement and Details. The boundary between the new enclosure and the engine room shall be constructed to B-15 fire rating.

B. The new steel structure shall consist of the following components:

1. A new structural frame to contain and support the new acoustical panels with structural supports below. Existing vertical grating supports shall be used where possible to avoid welding on the tank top.

2. A new deck section to support the new floating deck of the enclosure.

C. Provide and erect temporary protection for all equipment in the engine rooms that may be contaminated or damaged during this work. The protection shall include, but not be limited to, fabric and temporary wooden structures. No parts of any existing equipment are to be used as footholds or supports for personnel during this work. After the completion of the installation, remove all temporary protections and restore the work areas to their original condition.

D. The Contractor may temporarily remove existing equipment, fixtures, piping and electrical cables in order to carry out the work. Reinstall all temporarily removed items to their original location. All Items that may interfere with or be damaged by the work to be performed shall be protected or removed and reinstalled. These items may include, but are not limited to, piping, insulation, ceiling panels, light fixtures, cableways and bulkhead-mounted equipment inside the engine room, and Day Room. Temporarily removed items shall be reinstalled by the same method to their previous location. Equipment damaged in the removal process shall be repaired, replaced or restored to original condition.

E. Modify and/or relocate the existing inclined ladder between the dayroom deck and the engine room floor plate level to suit the new arrangement, as shown in WSF Dwg. No. 8303-583-007-01. Provide new padeyes and deck reinforcements for the inclined ladder at its new location.

F. Remove the existing engine room floor-plate and associated supports in the area of the new enclosure. Relocate one (1) existing light fixture in way of the new enclosure and install one (1) additional light fixture on the inside of the enclosure.

G. Relocate the existing carbon dioxide, fuel oil piping lines piping and control air line in way of the new enclosure to a location just above of the enclosure.

H. Prepare and coat all new steel work, as well as existing items with damaged coatings that are affected by this work.

J. Provide and install new joiner work inside the new enclosure as shown in WSF Dwg. No. 8303-583-007-01. The joiner systems shall be installed per manufacturers' recommended details. In particular, the interface between the joiner ceiling and joiner lining is critical to the overall sound attenuation. The new joiner lining shall be Norac Q-600-50 mm, or equal, with a B-15 fire rating and 42-db sound reduction rating.

L. Provide new joiner ceiling inside the new enclosure. The new joiner ceiling shall be compatible with the bulkhead panels with a B-15 fire rating and 42 db sound reduction rating.

M. Provide an A-60 floating floor on top of the new platform in accordance with. The floating floor shall be Norac F-300, or equal, with an A-60 rating. The floating floor shall be made of panels that are 1970 mm by 300 mm, tack-welded on ten (10) inch centers. The top surface of the panels shall be 3 mm galvanized steel sheets. The seams in the floating floor shall be caulked and gray dielectric matting installed.

N. Provide an acoustical door in the inboard bulkhead of the new enclosure. The door shall be an A-60 weather-tight door as manufactured by McGeoch Marine Limited. This Manufacturer is specified due to superior acoustic properties of the product. Equal acoustic performance shall be demonstrated for any proposed equal. The door shall be fitted with gaskets and a closure device. The leaf of the new door shall swing into the enclosure. Provide hinges Lawrence #8881151-32-D heavy-duty ball bearing 4½ x 4½. Provide lockset Best 34H-14J626-mortise type. Provide door closer LCM Model 4041.

O. Modify the existing inboard surface of the engine room day room to accept the new enclosure. The existing insulation contains lead sheathing. Portions of this insulation are to be removed to allow structural fit-up and welding. The remaining insulation shall be preserved. Upon completion of the installation the bulkhead shall be repaired to original condition. All material and workmanship shall comply with the U.S. Coast Guard requirements. Furnish all necessary documentation to demonstrate such compliance.

P. Modify the floor plates and associated supports in the engine room to suit the new enclosure.

26. STEERING SYSTEM UPGRADES

{ MAINTENANCE }

A. Clean and gas free all spaces including any hydraulic tanks and reservoirs associated with the Work, as necessary, and obtain a Marine Chemist certificate for "SAFE FOR WORKERS", and "SAFE FOR HOT WORK". Maintain the certificate during the course of the Work. Provide fire watches as required.

NOTE: This upgrade applies to both steering gears located in end #1 and end #2.

B. Remove valves, pipes and hoses in accordance with WSF Dwg. No. 8303-662-081-01 MV Kitsap, Hydraulic Steering System Upgrade.

C. Install new hoses, pipes and fittings in accordance with WSF Dwg. No. 8303-637-081-01. No split hose fittings are allowed.

D. Clean by acid pickling internal surfaces of newly fabricated hydraulic fluid piping and then oil to prevent corrosion. After piping systems have been pickled and oiled, all open ends shall be sealed tight using metal or plastic caps, plugs and blanks.

E. Bench test and set cross-port relief valves to 2000 psi prior to installation.

F. Bench test and set system relief valves to 1850 psi. Test to be witnessed by USCG and WSF Inspectors and the Staff Chief Engineer.

G. Hydrostatically test system with cylinder float valve open, relief valves jumpered out of the system, and plugs in cylinder end of hoses (4 places) to 3000 psi for 15 minutes. No leaks are allowed.

H. Clean and flush all new and existing system piping, tubing, and appurtenances through 10 Micron Filter Cartridge(s) to meet the Class 8 requirements of NAS 1638 (see **TABLE 8-1** below for particulate contamination). All associated equipment shall be thoroughly cleaned after fabrication and prior to installation in the Vessel. After installation, each new or modified system shall be thoroughly cleaned and flushed of all foreign material utilizing the normal system medium or a WSF approved substitute. When an acceptable level of cleanliness has been obtained, the flush has been secured, and the system has cooled down; remove the flushing oil from the system. Refill the system to its normal operating level with new hydraulic oil, filtered through a 10-micron filter.

TABLE 8-1
Maximum Contamination Limits Per 100 Milliliters (Class 8)

PARTICLE SIZE RANGE (MICRONS)	MAXIMUM NUMBER OF PARTICLES PER RANGE
5 to 15	64,000
15 to 25	11,400
25 to 50	2,025
50 to 100	360
Over 100	64

I. Fill system with clean hydraulic oil, CHEVRON AW Hydraulic 32.

J. Set counter balance valves to approximately 100 psi.

K. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

L. Conduct a test of the system during a Dock and Sea trials.

27. SHORE POWER UPGRADE

{PRESERVATION}

A. The existing shore power connection is to be upgraded to accommodate 150 amp service in lieu of the currently installed 100 amp service as shown on WSF Dwg. No. 8303-650-089-01, MV Kitsap, Shore Power Installation Block Diagram, WSF Dwg. No. 8303X-585-095-02 MV Kitsap, Diesel Control Power Supply Installation Block Diagram, WSF Dwg. No. 8303-650-095-02 MV Kitsap, Indicator and Alarm System Elementary Wiring Diagram, WSF Dwg. No. 8303X-585-089-02, MV Kitsap Ship Service Switchboard Arrasngement & Modifications, and WSF Dwg. No. 8303X-585-089-03, MV Kitsap, Generator Semi-Manual Paralleling System Connection Diagram and WSF Dwg. No. 8303X-585-089-04, MV Kitsap, Switchboard Control Wiring Diagram**.** Additionally, shore power is to be monitored for loss of phase, phase reversal and under-voltage. This monitoring relay shall open the shore power circuit breaker via a 24 VDC U/V trip provided internal to the new Shore Power circuit breaker. The relay shall be mounted in the Ship Service Switchboard with power for the shunt trip provided as**.** Connect the alarm output contacts to indicate the tripping of, or the inability to close the shore power breaker due to the action of its relay, to the alarm and monitoring system as shown on**.** Set the percent unbalance on the relay to 10% and the time delay to 5 seconds. Record the final settings and submit them to the WSF Representative.

B. The existing shore power receptacles located on the Vehicle Deck, and the shore power ammeter and its associated current transformers and the circuit breaker in the Ships Service Switchboard shall be removed and disposed of. Use WSF Dwg. No. 8303-650-089-01 for removals.

C. Provide and install a new, calibrated Crompton shore power ammeter, similar in style to existing switchboard meters and current transformers with a scale range that has 150 A about mid-scale. The ammeter shall mount in the same location as the existing device, shall be designed for switchboard applications (1% accuracy of full scale) and shall have a red tick mark corresponding to 150 A. The current transformers shall be provided with General Electric, Type EB-27 shorting terminal blocks for making connections.

D. Provide and install a new shore power circuit breaker. The replacement circuit breaker shall be Square D, I-Line, Class 655, Type KA rated for 600 VAC, 3 phase, 60 Hz with a 150 A rating/250 A frame and factory installed 24 VDC U/V trip, and auxiliary switch for circuit breaker status indicator lights. The breaker shall have copper lugs capable of receiving a 4/0 cable per phase and shall be rated to operate in a 50º C ambient environment. The breaker shall be installed in the same location as the existing 100 A breaker having a compatible mounting style (plug-on or bolt-on). Reuse the existing Kirk Key lock on the new circuit breaker. During testing, the magnetic trip shall be set at the lowest possible level while still being able to start the Fire and Sprinkling Pumps. Once this setting has been achieved and observed by the WSF Representative, the adjustment screws shall be painted over to preclude tampering. Record the final settings and submit them to the WSF Representative. Install indicator lights using WSF Dwg. No. 8303-650-095-02.

E. Provide and install a Square D Class 3140, non-fusible, 200 Amp, 600 V, double throw safety switch. Connect to permit selecting shore power from the No. 1 or No. 2 end cable. Mount the switch on the No. 2 end of the ship service switchboard.

F. Provide two (2) new shore power cables each consisting of 150' of Carol, Type G-GC, 600 V, No. 1, three (3) conductor cable with an Appleton Type AP20033CD 3W, 3P, 200 A, Style 1 (with clamping ring) plug for the shore end and appropriately sized copper power compression lugs on the other. The Vessel end of the shore power cable shall be hardwired into a watertight, 316 stainless steel connection box in the vicinity of the existing receptacles taking care to avoid any interference with existing equipment and its function. Each connection box shall be provided with connection bolts, washers and nuts of the appropriate size to connect the shore power portable cable to the Vessel's cable to complete the shore power connection. Provide an Appleton Type AJA mounting box at each end of the Vessel, without internal plug or wiring, to serve as watertight stowage for the shore ends of the cables when the vessel is not connected to shore power. Locate these dummy receptacles convenient to the cable stowage racks.

G. Provide a label plate, red phenolic with white core, containing instructions on how to connect to shore power adjacent to each shore connection, see WSF Dwg. No. 8303X-585-089-02.

H. Provide and install new shore power cable from the new connection boxes at each end of the Vehicle Deck to the new shore power safety switch mounted on the switchboard and from the shore power safety switch to the new shore power circuit breaker in the switch board.

I. Wire controls for shore power breaker as shown on WSF Dwg. No. 8303X-585-089-03

28. INSTALLATION OF AUTOMATIC DRAFT INDICATION SYSTEM {NAVIGATION}

A. Clean and gas free all spaces including any fuel tanks associated with the Work, as necessary, and obtain a Marine Chemist certificate for "SAFE FOR WORKERS", and "SAFE FOR HOT WORK". Maintain the certificate during the course of the Work. Provide fire watches as required.

NOTE:

Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

B. Install and connect new cables and components required by this ITEM. Insure cables and wires installed by this ITEM are run and marked, and continuity tests are made in accordance with WSF General Construction Requirements.

C. Install the WSF furnished Automatic Draft Indication System as indicated on WSF Dwg. No. 8303-607-095-01 MV Kitsap Automatic Draft Indication System Electrical Installation; and WSF Dwg. No. 8303-607-002-01, MV Kitsap Automatic Draft Indication System Hull Installation;

D. All new steel will be prepared to an SSPC-SP 10, Near White Blast Cleaning. Existing painted surfaces affected by this work will be prepared to a SSPC-3, Power Tool Cleaning.

E. Fabricate and install transceiver support tubes, cable guards and junction boxes in accordance with WSF Dwg. No. 8303-607-002-01. Install four (4) WSF furnished ultrasonic transducers and mounting hardware.

F. Within the first three (3) days of Vessel arrival, provide WSF Inspector with the exact length of Transceivers Support Pipes that will be installed through the "guard".

G. Install one WSF furnished pilothouse display unit in each pilothouse in accordance with WSF Dwg. No. 8303-607-095-01. Install one (1) WSF furnished system central processing unit in pilothouse number 1. Install one (1) WSF furnished draft indicator system printer on the chart table in pilothouse number 1 as designated by the WSF inspector.

H. Install black phenolic nameplates with white lettering on all electrical enclosures. Lettering shall be at least 3/8 inch high.

I. Install and terminate all interconnecting cables, breakers, and other electrical hardware in accordance with WSF Dwg. No. 8303-607-095-01. Band, megger, and tag the cable in accordance with WSF 002, General Construction Requirements.

J. After equipment installation is complete, obtain the services of Weir-Jones Engineering Ltd, the equipment vendor, to accomplish system startup/commissioning, and necessary calibrations.

K. Conduct a satisfactory operational test to the satisfaction of the Weir-Jones Engineering LTD. Vendor Representative, the WSF and USCG Inspectors. Provide the WSF Inspector with three (3) written copies of the test results.

L. Apply one (1) coat of INTERNATIONAL Intertuf 262 series Epoxy, to a minimum of 5 mils (DFT), and topcoat with INTERNATIONAL, Interthane PC series at a minimum of 2 mils (DFT) of proper color, to all prepared areas.

29. LOCAL AREA NETWORK INSTALLATION

{ IT }

A. Install new fiber optics, LAN and antennas as shown on WSF Dwg. No. 8303-642-095-01, M/V Kitsap, Super-Lan/Security & Surveillance / Wireless Over Water Installation. Develop cable routing for the fiber optic and Cat 5E cables.

NOTE:

Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused. New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

B. Prior to installing any fiber optic cables perform an OTDR test and submit results to the WSF Inspector. Install new cables required by WSF Dwg. No. 8303-642-095-01. Insure cables and wires installed by this Item are run and marked, and continuity tests are made in accordance with WSF 002, General Construction Requirements. Perform a second OTDR on the fiber cables after installation. Compare the results to the pretest and submit results to the WSF Inspector.

C. Provide and install cable and power to the UPS's from the distribution panels. Cable shall be terminated as a standard duplex outlet.

D. Install foundations and antennas as required on WSF Dwg. No. 8303-642-095-01, welding shall be in accordance with WSF 002, General Construction Requirements. Foundations shall be installed for all items identified as OFE 1, 2, and 3.

E. Install coax from the radio enclosures to the antenna foundations. Terminate and end seal spare lengths of cable.

F. WSF will provide the services of a licensed electronics Contractor to mount the OFE equipment, perform final terminations and system check out.

G. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

30. INSTALL SECURITY SYSTEM

{ SECURITY}

A. Install security modifications shown on WSF Dwg. No. 8303-639-005-01, MV Kitsap, Pilothouse Security Mods, WSF Dwg. No. 8303-650-090-01, MV Kitsap, Electrical One-Line Diagram, WSF Dwg. No. 8303X-585-089-02 M/V Kitsap, Ship Service Switchboard Arrangement and Modifications, WSF Dwg. No. 8303-639-095-01 MV Kitsap, Homeland Security Plan, WSF Dwg. No. 8000-639-095-01 All Vessels Homeland Security Typical Wiring Diagram Standard, WSF Dwg. No. 8303-639-095-02 MV Kitsap, Homeland Security Cabling & Wiring Diagram, and WSF Dwg. No. 8000-639-095-02 All Vessels Homeland Security Plan Typical Foundations Standard. Note WSF supplied items on Dwg. No. 8303-639-095-02.

B. Modify the pilothouse enclosures as shown on WSF Dwg. No. 8303-639-005-01.

NOTE:

Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

C. Fabricate equipment cabinet and electronic security devices foundations and camera mounts in the locations shown on WSF Dwg. No. 8303-639-095-01.

D. Add ground detection as indicated on WSF Dwg. No. 8303-650-090-01 and WSF Dwg. No. 8303X-585-089-02.

E. Install new cables required by WSF Dwg No. 8303-650-090-01, WSF Dwg. No. 8303-639-095-01,WSF Dwg No. 8000-639-095-01, and WSF Dwg No. 8303-639-095-02. Insure cables and wires installed by this ITEM are run and marked, and continuity tests are made in accordance with WSF 002, General Construction Requirements. Prior to installing any fiber optic cables perform an OTDR test and submit results to the WSF Inspector. Perform a second OTDR on the fiber cables after installation. Compare the results to the pretest and submit results to the WSF Inspector

F. Obtain the services of ABSCO Alarms (206) 367-1166 to make all connections and demonstrate the operation of the system.

G. Install stud runs and penetrations, run cables and install the security hardware and electrical components.

H. Replace all disturbed structural, thermal, and acoustical insulation to match original installation.

I. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat International Intertuf 262, Buff to a minimum to obtain 6 to 8 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Intercare 755, Blue White, to a minimum of 2 mils (DFT) to match surrounding.

31. INSTALL DECK HOUSE EXTENSION

{ SECURITY}

A. Install a new security enclosure shown on WSF Dwg. No. 8303-639-003-01, MV Kitsap, Security Equipment Enclosure Structural Arrangement and Details, WSF Dwg. No. 8303-639-012-01, MV Kitsap, Electronic Equipment Room Ventilation Arrangement and Details and WSF Dwg. No. 8303-639-090-01, MV Kitsap, Electronic Equipment Room Electrical Installation Navigation/Bridge Deck, No. 2 End.

B. Electrical installation for the new enclosure shall be in accordance with WSF Dwg. No. 8303-639-090-01.

C. Provide one new 30 x 81 weather access door.

D. Install a WSF furnished CO2 fire extinguisher in the Electronic Equipment Room in a location designated by the WSF Inspector.

E. Install the ventilation system for the security room as shown on WSF Dwg. No. 8303-639-012-01.

F. Replace all disturbed structural, thermal, and acoustical insulation to match original installation. Install two (2) inch thick hull board insulation on insulation button head pins, nine (9) inches on center, to the overhead and exterior bulkheads. Place one (1) inch thick insulation around all stiffners. Tape all joints. Weld a two (2) inch high bounding bar to the deck edge.

G. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat International Intertuf 262, Buff to a minimum to obtain 6 to 8 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Intercare 755, Blue White, to a minimum of 2 mils (DFT) to match surrounding.

32. SATELLITE COMPASS INSTALLATION

{ NAVIGATION}

A. Install WSF furnished FURUNO Satellite Compass, Model SC-110 in accordance with WSF Dwg. No. 8303-647-015-01, MV Kitsap, Antenna Foundation for SC110 Satellite Compass Construction Details and WSF Dwg. No. 8303-647-094-01 MV Kitsap, Satellite Compass Installation Wiring Diagram and below specification.

B. Install the WSF furnished Satellite Compass Antenna on top a Contractor fabricated mast located on top the existing mast. Orientation of the antenna to the Vessel fore and aft line is critical.

C. Remove the overhead in the deckhouse and insulation as required to weld the transits and to run the wiring. Restore all removals upon completion of testing.

D. Install cable and cable runs from new antenna down the mast, through the overhead of the deckhouse and into the aft bulkhead of the overhead of the Fan Room. Install new transit watertight penetrations in the overhead of the deckhouse of the size and type to allow the antenna leads to pass through.

NOTE:

Wherever new penetrations are required, they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused. New Multi-Cable transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the WSF and USCG Inspector, and the Vessel Staff Chief Engineer.

E. Conduct Power Meter test of all new cabling to insure the installation meet all requirements. Provide WSF Inspector with three (3) copies of test results.

F. Install the SC-1101 Processor unit in the void space below the Pilot House at the same location as the ADIS Processor. Install mounting plate on the newly installed flanges, mount Processor on the mounting plate with Stainless Steel Bolts, lock washers and Nuts.

G. WSF will provide the services of an Electronics Contractor to make the final terminations and install the display units in the pilothouses.

H. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat International Intertuf 262, Buff to a minimum to obtain 6 to 8 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Intercare 755, Blue White, to a minimum of 2 mils (DFT) to match surrounding.

33. 24 VDC SYSTEM AND ALARM SYSTEM MODIFICATIONS

{ NAVIGATION}

A. Modify the 24 Volt DC Distribution System for the pilothouse electronic equipment, engine rooms and EOS alarms as indicated on WSF Dwg. No. 8303-657-095-01, M/V Kitsap, I.C. Battery Charger Replacement Electrical Installation, WSF Dwg. No. 8303-650-090-02, MV Kitsap, Pilothouse 24V DC Distribution System Modifications, and WSF Dwg. No. 8303-650-095-02 MV Kitsap, Indicator and Alarm System Elementary Wiring Diagram, Rochester Annunciators Vendor Data.

B. Remove the existing battery charger and install two (2) new chargers as shown on WSF Dwg. No. 8303-657-095-01.

C. Modify the alarm system as shown on WSF Dwg. No. 8303-650-095-02. If existing cabling is short add a terminal strip.

D. Remove and restore all interferences including insulation disturbed by mounting of items and installing transits.

E. Conduct megger and electrical tests of all new cabling to insure the installation is correct. Provide WSF Inspector with three (3) copies of test results.

F. Modify the annunciator panels in the EOS using the Rochester vendor data and Dwg. No. 8303-650-095-02.

34. JOINER DOOR RENEWAL

{ MAINTENANCE }

A. Purchase and install two new joiner doors for the paint locker and main deck gear locker**.**

B. New joiner doors and frames shall be manufactured in accordance with CFR-46-72.05. Frames are to be steel angle with Stainless Steel flatbar sill. Flanged frame shall be ¼" thick with a 2" bolting frame. Panels are to be 11 gauge, formed and welded on all edges and suitably insulated for the bulkhead requirement. Panel is to be stiffened with box tube stiffners at edges, around windows and in way of the closer. Internal core of the doors shall be primed.

C. Provide the services of the door manufacturer or Best Lock to install door hardware and closures.

D. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat International Intertuf 262, Buff to a minimum to obtain 6 to 8 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Intercare 755, Blue White, to a minimum of 2 mils (DFT) to match surrounding

35. ENGINE ROOM FRAME REPAIRS

{ MAINTENANCE }

A. Provide labor, material, and equipment to clean, and gas free all spaces associated with the Work, as necessary, and obtain a Marine Chemist certificate for "SAFE FOR WORKERS", and "SAFE FOR HOT WORK" as necessary. Maintain the certificate during the course of the Work. Provide fire watches as required.

B. Provide labor, material, and equipment to crop out and renew a 4 foot by 1 foot piece of deep web frame located at frame No.12. Beam to shell plate connections shall be skip welded per the original installation.

C. Provide ABS mill certification for all new steel prior to moving steel onboard. New steel shall be 20,4# ASTM A-36/ABS GR A.

D. Provide labor, material, and equipment to test all new welds to the satisfaction of the USCG and the WSF Inspector.

E. New steel shall be grit blasted to SSPC-SP 10, Near-White Blast Cleaning, and coated with an appropriate weld through primer, prior to installation on the Vessel. After installation, of the new steel, prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat International Intertuf 262, Buff to a minimum to obtain 6 to 8 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Intercare 755, to a minimum of 2 mils (DFT) to match surroundings.

36. WEIGHT CONTROL

{ MAINTENANCE}

A. The Contractor shall document weight changes and centers of gravity throughout the execution of work.

B. At the pre-arrival conference the Contractor shall prepare and submit to WSF for approval, a plan for monitoring weight and center information for all weights added, removed and relocated during this Vessel availability. This plan will address individuals, equipment and techniques to be used in the weight control process including the following points:

1. Certification of weighing facilities.
2. Where (location) the weighing will be accomplished.
3. If software is to be used, identify the software.
4. A sample data sheet showing date and time of weighing, the individual responsible for the activity, material identification, unit weight, quantity, center of gravity, and final disposition of the material (i.e. added, removed or relocated).

C. Data sheets generated by the approved process shall be submitted to WSF with progress invoices. Progress payments WILL NOT be made until all of the required weight control records have been reviewed by the WSF Representative.

37. PILOTHOUSE RADAR MODIFICATION

{NAVIGATION}

A. Install a new 4 by 4 Multi-Cable Transits Nelson type under the chart table.

B. All welds will be dye penetrant tested and witnessed by the WSF Inspector. Provide three (3) copies of the test results to the WSF Inspector.

C. Prepare new and disturbed areas in way of the safety line and platform installation to an SSPC-SP 3, power tool cleaning.

D. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color

(END)